



Zenith
MINERALS
LIMITED

13th May 2020

Develin Creek Copper-Zinc-Gold Project QLD (100%), – Exploration Update

♦ **New copper prospect (Snook) identified 30km south of Zenith's current JORC resources.**

♦ **Snook Copper Prospect identified during regional systematic soil sampling campaign:**

- Initial single rock sample from malachite rich (copper-oxide) surface exposure returned very high copper 7.58% Cu;
- Base metal and trace elements of 7.58% copper, 0.48g/t gold, 7.8g/t silver, 0.13% arsenic, 0.16% lead and 0.3% zinc are like those in rock samples taken at surface above the known copper-zinc resources;
- Rock geochemistry signature typical of volcanic hosted massive sulphides (VHMS);
- Geological reconnaissance mapping and soil sampling outline a 25m wide zone of gossanous sedimentary (bleached and sheared) rocks over 150m of strike that occur as discrete units enclosed within basalt that are part of the prospective Rookwood Volcanics host sequence.

♦ **Further mapping, sampling and geophysical surveying is required to better define the Snook Copper target.**

Zenith Minerals Limited ("Zenith" or "the Company") is very pleased to provide an update on the Company's 100% owned Develin Creek copper-zinc-gold project in Queensland. First pass reconnaissance sampling from a new area, the Snook Prospect located 30km south of the existing JORC resources has returned highly encouraging base metal and gold values up to 7.58% copper and 0.48 g/t gold.

As foreshadowed in the Company's recent quarterly report, field work as part of the Company's systematic regional surface soil sampling program at Develin Creek identified a new area with surface copper mineralisation.

Geological reconnaissance mapping and soil sampling has outlined a 25m wide zone of gossanous sedimentary (bleached and sheared) rocks over 150m of strike that occur as



discrete units enclosed within basalt that are part of the prospective Rookwood Volcanics' host sequence.

The base metal and trace elements within the new rock sample returned highly anomalous results: 7.58% copper, 0.48g/t gold, 7.8g/t silver, 123ppm bismuth, 46ppm molybdenum, 28ppm antimony, 0.13% arsenic, 0.16% lead and 0.3% zinc.

Corporate Details

ASX: ZNC

Issued Shares (ZNC)	243.4M
Unlisted options	5.6M
Mkt. Cap. (\$0.05)	A\$13M
Cash (31 st Mar 19)	A\$1.28M
Debt	Nil

Directors

Mike Joyce:
Non-Exec Chairman

Michael Clifford:
Managing Director

Stan Macdonald:
Non-Exec Director

Julian Goldsworthy:
Non-Exec Director

Graham Riley:
Non-Exec Director

Peter Bird:
Non-Exec Director

Major Shareholders

Directors	~16%
HSBC Custody. Nom.	12%
J P Morgan	6.1%
Miquilini	4.4%
Abingdon	4.2%

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These geochemical results are like those in rock samples taken at surface above the known copper-zinc volcanogenic massive sulphides (VMS) deposits further to the north where Zenith has defined JORC resources of 2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold and 9.6g/t silver (2.62% CuEq) ZNC ASX release 15th February 2015 (Figures 1 to 3).

Initial geological reconnaissance mapping and soil sampling has outlined a 25m wide zone of gossanous sedimentary (bleached and sheared) rocks over 150m of strike that occur as discrete units enclosed within basalt that are part of the prospective Rookwood Volcanics host sequence (Figure 1).

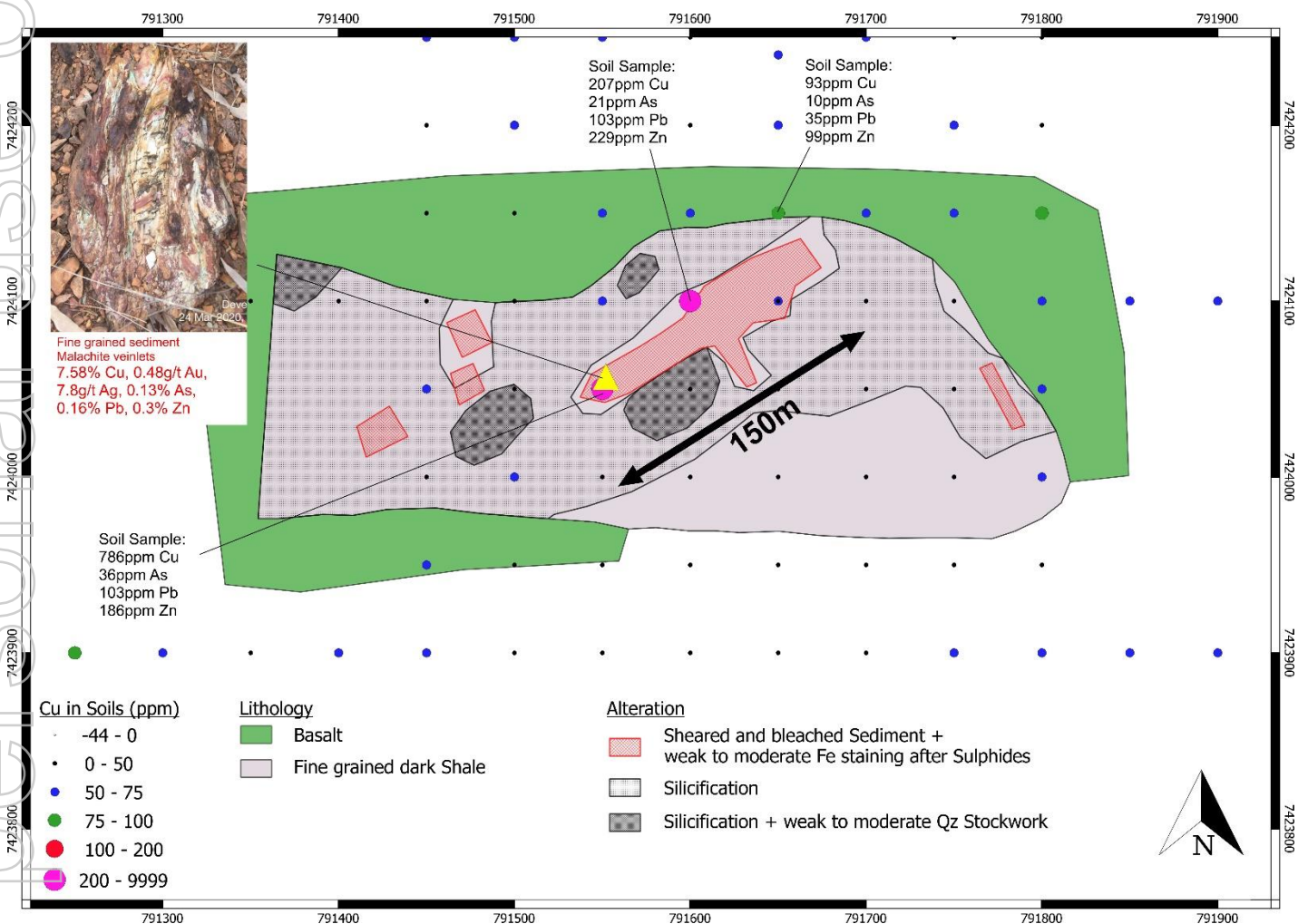


Figure 1: Snook Copper Prospect Geology and Geochemical Results

Further mapping, sampling and geophysical surveying is required to better define the Snook Copper target. Following up work is scheduled to commence following the completion of drilling at the Company's Red Mountain gold project and after confirmatory sampling has been completed at the Company's Flanagans gold project, both also located in SE Queensland.

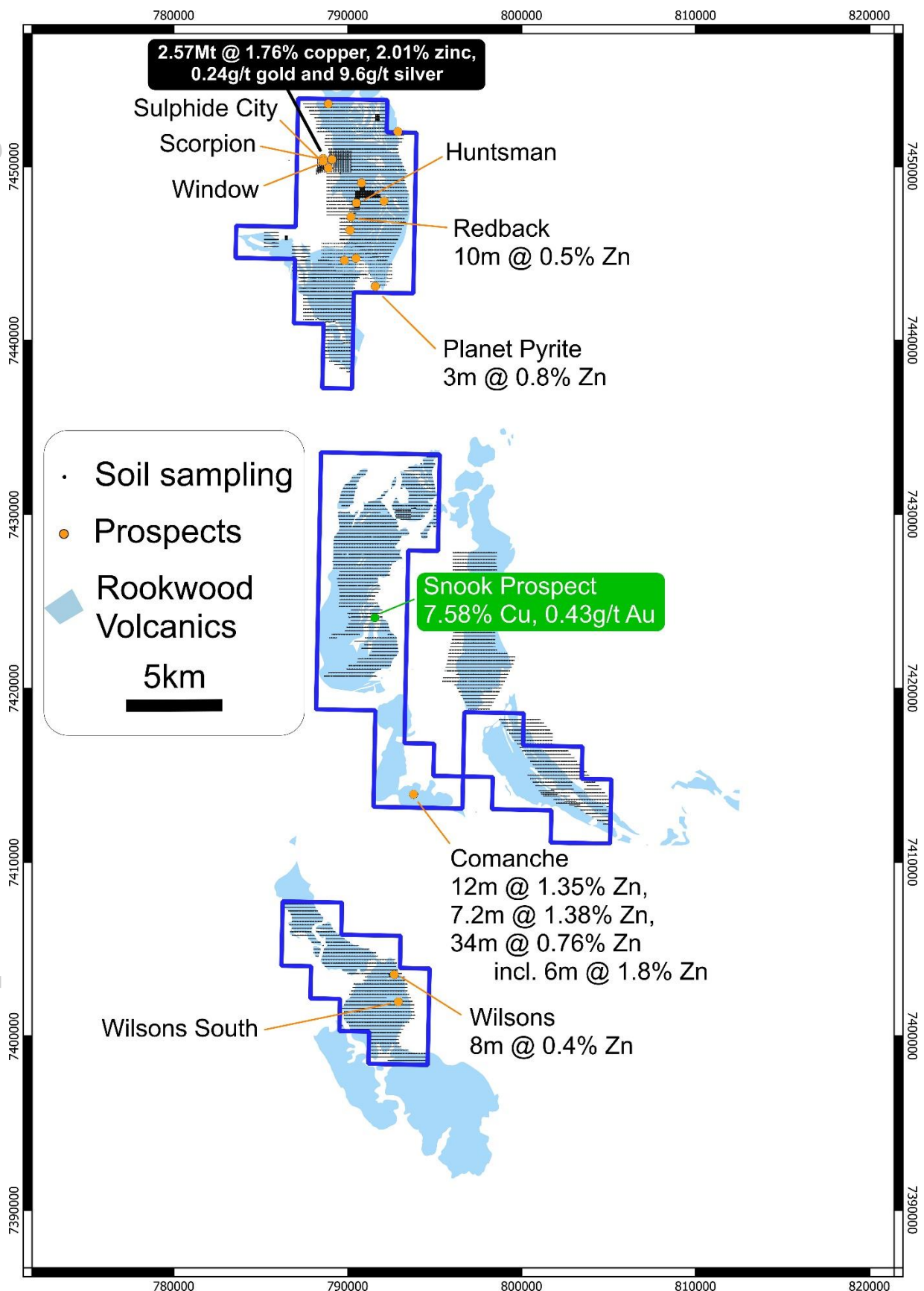


Figure 2: Develin Creek Copper-Zinc-Gold Project – JORC resources, Prospects & Geochemical Anomalies



Background on Develin Creek Copper-Zinc Project

The Develin Creek project (Figure 3) contains a VMS copper-zinc deposit with an Inferred Mineral Resource (JORC 2012) of: 2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold and 9.6g/t silver (2.62% CuEq) released to ASX on the 15th February 2015. Upside to resource grades are considered likely with Zenith RC hole twinning previous 1993 percussion hole returning significantly higher copper, zinc, gold and silver grades (300% to 700% higher). Initial metallurgical testwork results shows positive first stage “rougher” recoveries of 90%. The Company holds exploration permits that cover the highly prospective host rocks over 50km north – south.

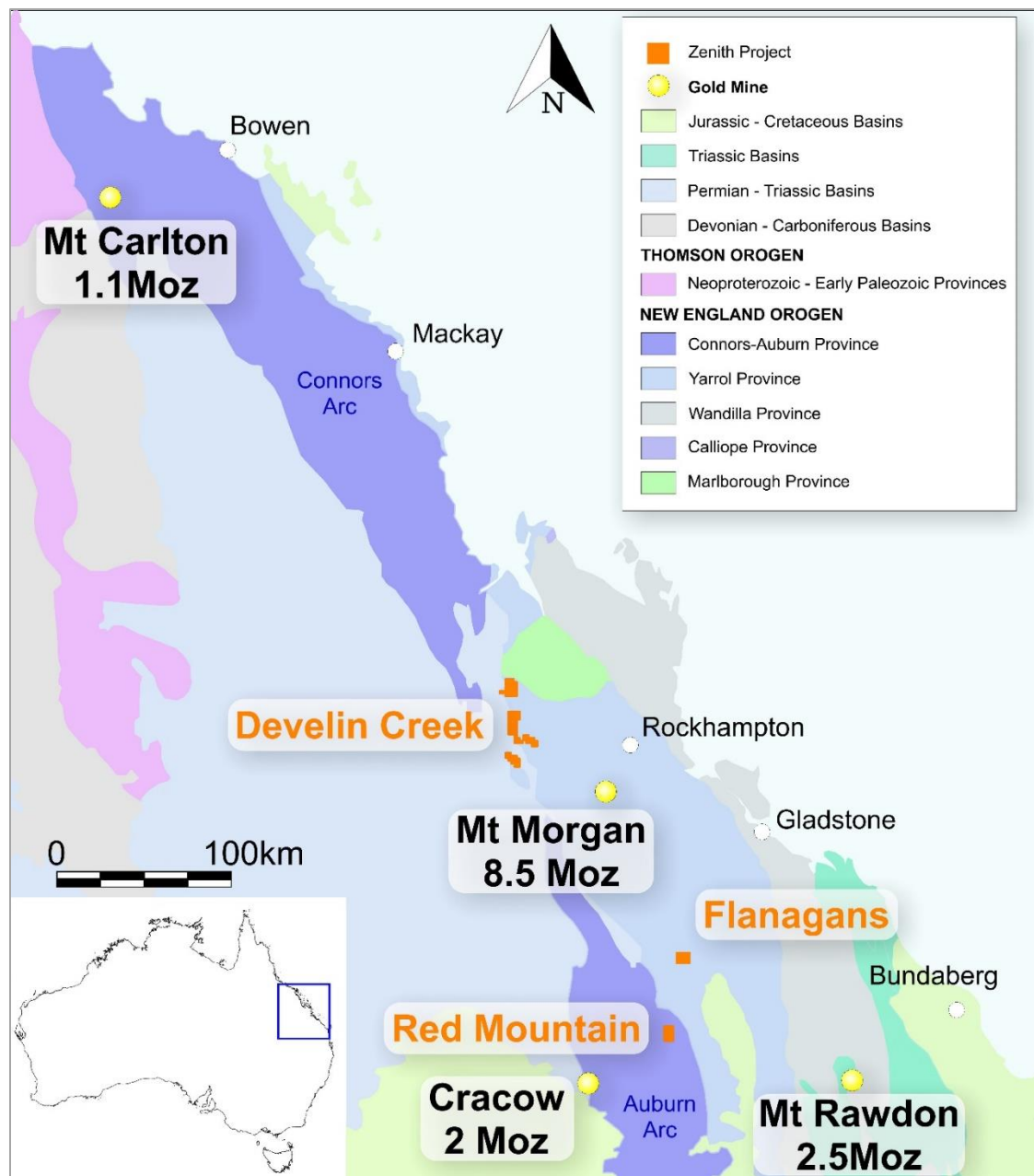


Figure 3: Develin Creek Copper-Zinc-Gold Project – Location Map



Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith Minerals Limited. Mr Clifford has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Authorised for release by the Zenith Minerals Limited Board of Directors – 13th May 2020

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Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i>	Rock samples were collected by hand, at the surface, from in-situ outcrops. Soil samples on systematic sample grid and analysed using a portable XRF unit.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Grab samples are believed to be representative of the outcrops they come from.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i>	1-2kg rock sample was collected by a senior field technician, samples were broken using a hammer from outcrop. Sample site was later mapped by a qualified geologist. Rock sample was crushed in the laboratory and then pulverised before analysis. Soil samples were assayed by an Olympus portable XRF, reading times were set to soil mode and a 3 beam 90 second reading was taken for each sample. Approximately 1 in 30 samples were duplicated and standards and blanks were inserted every 30 samples.
Drilling techniques	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i>	No Drilling
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	No Drilling
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	No Drilling
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	No Drilling



Logging	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	Rock sample was geologically described
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	Qualitative logging
	<i>The total length and percentage of the relevant intersections logged.</i>	No Drilling
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	No Drilling
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	No Drilling
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Rock sample was analysed at Bureau Veritas Laboratories in Perth, Western Australia, the samples were crushed, pulverised and assayed by ICP for trace elements and gold using fire assay
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	~2kg of rock was crushed and pulverised and a sub-sample was taken in the laboratory and sent for analysis.
Sub-sampling techniques and sample preparation - continued	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	Rock sampling was selective and based on geological observations. Soil sampling was systematic initial 200m x 50m sampling followed by infill sampling was completed on a 50m x 50m grid
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Rock sample was 1kg to 2kg in weight which is appropriate to test for the grain size of material. 200g soil samples were collected by a geologist, a 30g subsample was compressed into a pressed powder and analysed by an Olympus portable XRF analyser in a test stand. Analysis were duplicated for approximately 1 in 30 samples.
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	The rock sample was crushed and assayed by ICP for trace elements and gold using fire assay
	<i>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i>	Soil samples were assayed by an Olympus portable XRF, reading times were set to soil mode and a 3 beam 90 second reading was taken for each sample. Approximately 1 in 30 samples were duplicated and standards and blanks were inserted every 30 samples.
	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	Certified reference material was included in the rock assay batch and internal laboratory samples were included with rock sample



Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Three company personnel have observed the assayed sample.
	<i>The use of twinned holes.</i>	No drilling
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Field data were all recorded in field note books and sample record books and then entered into a database
	<i>Discuss any adjustment to assay data.</i>	No adjustments were made.
Location of data points	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Sample location is based on GPS coordinates +/-5m accuracy
	<i>Specification of the grid system used.</i>	The grid system used to compile data was MGA94 Zone 55
Location of data points - continued	<i>Quality and adequacy of topographic control.</i>	Topography control is +/- 10m.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	All samples are shown on Figure 2.
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	The data alone will not be used to estimate mineral resource or ore reserve
	<i>Whether sample compositing has been applied.</i>	No compositing applied
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	Rock sample was taken selectively, all soil samples on systematic grid lines.
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	No drilling
Sample security	<i>The measures taken to ensure sample security.</i>	Samples were kept in numbered bags until delivered to the laboratory
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	Sampling techniques are consistent with industry standards



Section 2 Reporting of Exploration

Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<p>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</p> <p>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</p>	<p>The project is comprised of two licences: EPM 17604, and 16749 owned 100% by Zenith Minerals Limited.</p> <p>The tenements are located on privately owned grazing properties.</p> <p>All tenements are 100% held by Zenith and are in good standing with no known impediment to future granting of a mining lease.</p>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul style="list-style-type: none"> Mineralisation was first identified in late 1992 by Queensland Metals Corporation (QMC) over what is now the Scorpion deposit. Between 1993 and mid-1995, QMC undertook an extensive geological and geophysical exploration program focused on the Develin Creek area and other prospects to the South. In July 1995, QMC entered into a joint venture agreement with Outokumpu Mining Australia Pty Ltd (OMA) to continue exploration. OMA completed the first resource estimate for the Develin Creek deposits, then withdrew from the joint venture in 1996 and QMC (later changed names to Australian Magnesium Corporation) maintained the tenements until relinquishment in 2002. Icon Limited (Icon) acquired the tenement and in 2007 completed this resource estimate for Sulphide City, Scorpion and Window from historical drilling data. Fitzroy Resources acquired the project from Icon and listed via prospectus dated October 2010 and subsequently completed a HeliTEM survey, minor DHEM, some geochemical sampling and drilling of 12 holes). Of those 12 holes, 6 diamond holes were drilled to the south and east of the Develin Creek resource. Drill hole FRWD0002 collared near the southern edge of the resource intersected 13.5m grading 3.3%Cu, 4.0%Zn, 0.5g/t Au and 30g/t Ag in massive sulphide from 182m. The mineralisation was intersected in a position that extends the known limits of the resource by around 40m to the south where it remains open to further upside. In addition, Fitzroy completed 3 RC holes at the Lygon Prospect and a further 2 south of the Develin Creek resource area. No previous sampling has been conducted at the Snook prospect.



Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	Sulphide City, Scorpion and Window are later Permian age volcanogenic massive sulphide deposits hosted with the Rookwood Volcanics basaltic sequence. Mineralisation observed at the Snook Copper prospect is consistent with this style of mineralisation. Copper observed at surface occurs within bleached and altered sedimentary rocks that are interbeds within the basalt sequence.
Drill hole Information	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <ul style="list-style-type: none"> <i>o easting and northing of the drill hole collar</i> <i>o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> <i>o dip and azimuth of the hole</i> <i>o down hole length and interception depth</i> <i>o hole length.</i> <p><i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></p>	No drilling
Data aggregation methods	<p><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <p><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p>	No high-grade cutting
Data aggregation methods - continued	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	No metal equivalents used.
Relationship between mineralisation widths and intercept lengths	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></p>	No drilling
Diagrams	<i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i>	Refer to descriptions and diagrams in body of text



Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All results reported on Figures 1& 2.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful or material exploration data to be reported at this stage
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Detailed geological mapping is planned along with geophysical surveying is planned to test the true thickness of the poorly exposed copper-zinc zones and to track mineralisation where it extends beneath shallow soil cover.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to figures in body of report.

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